

CLAIMS

1. A method of machining a flange of a wheel arch to bend said flange (5) of said wheel arch (2) of a vehicle body (1), comprising the steps of:

conveying a general-purpose actuator (96) to a machining position for said flange (5) with a moving mechanism (34) while a dedicated die (104) is being mounted on said general-purpose actuator (96) provided on said moving mechanism (34); and

actuating said general-purpose actuator (96) to bring said dedicated die (104) into abutment against said flange (5) and to cause said dedicated die (104) to bend said flange (5).

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2. A method of machining a flange according to claim 1, wherein said flanges (5) of respective wheel arches (2) on both sides of said vehicle body (1) can be bent substantially simultaneously when at least a pair of said moving mechanisms (34, 36) disposed respectively on both sides of said vehicle body (1) is actuated.

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3. A method of machining a flange according to claim 1 or 2, wherein said dedicated die (104) is selected depending on the shape of said flange (5) and the selected dedicated die (104) is removably mounted on said general-purpose actuator (96).

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4. A method of machining a flange according to any one of claims 1 through 3, wherein a machining station (S2) for bending said flange (5) is included in a machining station for performing a machining process different from a bending process.

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5. A method of machining a flange of a wheel arch to bend said flange (5) of said wheel arch (2) of a vehicle body (1), comprising the steps of:

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disposing workpiece guide means (85) with a predetermined clearance provided on an outer surface of said flange of said wheel arch (2) and disposing workpiece rest means (94) with a predetermined clearance provided on an inner surface of said flange of said wheel arch (2);

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moving said workpiece guide means (85) and said workpiece rest means (94) closely to each other to dispose said workpiece guide means (85) on the outer surface of said flange and to dispose said workpiece rest means (94) on the inner surface of said flange; and

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bending said flange (5) with workpiece bending means (104) while said workpiece guide means (85) is holding the outer surface of said flange and said workpiece rest means (94) is holding the inner surface of said flange.

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6. An apparatus for machining a flange of a wheel arch to bend said flange (5) of said wheel arch (2) of a vehicle

body (1), comprising:

a moving mechanism (34) for conveying a general-purpose actuator (96) to a machining position for said flange (5), with said general-purpose actuator (96) provided on said moving mechanism (34); and

5 a dedicated die (104) replaceably mounted on said general-purpose actuator (96), for bending said flange (5) when said general-purpose actuator (96) is actuated.

10 7. An apparatus for machining a flange according to claim 6, wherein at least one of said moving mechanisms (34, 36) is disposed on both sides of said vehicle body (1), for substantially simultaneously bending said flanges (5) of respective wheel arches (2) on both sides of said vehicle body (1).

15 8. An apparatus for machining a flange according to claim 6 or 7, comprising a plurality of dedicated dies (104) selectable depending on the shape of said flange (5).

20 9. An apparatus for machining a flange according to claim 6, wherein a machining station (S2) for bending said flange (5) is included in a machining station for performing a machining process different from a bending process.

25 10. An apparatus for machining a flange according to claim 9, comprising a dedicated die replacing section (112)

disposed outside of an operating range of said machining station (S2), with a plurality of said dedicated dies (114) being stockable in said dedicated die replacing section (112).

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11. An apparatus for machining a flange of a wheel arch to bend said flange (5) of said wheel arch (2) of a vehicle body (1), comprising:

a base (46);

10 first slide means (55) slidably mounted on said base (46), with workpiece guide means (85) being disposed on said first slide means (55);

second slide means (57) slidably mounted on said base (46), with workpiece rest means (94) and workpiece bending means (104) being disposed on said second slide means (57);
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mutual distance changing means (65) for moving said first slide means (55) and said second slide means (57) toward and away from each other.

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12. An apparatus for machining a flange according to claim 11, wherein said workpiece guide means (85) has a nonmetallic pad (84) disposed in a workpiece abutment region thereof.

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13. An apparatus for machining a flange according to claim 11, wherein said mutual distance changing means (65)

has a cylinder (66) coupled to said first slide means (55)
and said second slide means (57).